INTERNATIONAL TRADE ADMINISTRATION

WORLDWIDE VOIP REGULATORY AND MARKET INFORMATION

This report covers the following topics: regulations pertaining to access to the Internet and Internet protocol (IP) telephony; current market conditions for IP telephony and voice over Internet protocol (VOIP); key international VOIP providers; and relevant contacts for companies seeking to provide IP equipment and services overseas.

The information was gathered from a number of sources, including, but not limited to: private consulting firms, news reports, regulatory bodies, international fora, and U.S. Embassies and Consulates abroad.

All countries have been updated between 2005 and 2007. Countries marked with an asterisk (*) are updated as of 2009 or the information is still current since the last update. However, since VOIP regulation is evolving in many countries, there may be inaccuracies. For further details about the countries in this report or information about countries not covered here, contact the author, Ms. Paulette Hernandez, Senior International Trade Specialist in the Office of Technology and Electronic Commerce at the U.S. Department of Commerce.

ARGENTINA

VOIP REGULATIONS AND MARKET INFORMATION

According to resolution 764/2000 of the Secretariat of Communications, VOIP services are a free telecommunications service in competition in Argentina. It is officially allowed and there are no known efforts from the Argentine government to regulate it or impose any restrictions on it.

Most major telecom carriers are engaged in the whole range of telecom services. Brazilian Internet service provider UOL announced in October 2004 that its Argentinean unit launched an IP-telephony service for residential users. The service allows customers to make long-distance calls over dial-up connections, by first downloading some application software. (It is useful to note that over 80 percent of Argentinean ISP subscribers are dial-up users.)

At the end of March 2007, 38.5% of Argentine companies were using IP telephony, compared with 31.1% three months earlier. At the end of 2004, only 4.8% of corporations were using VOIP, a figure that rose to 19.4% by the end of 2005. The use of VOIP is higher in companies with more than 500 employees, with a penetration of 51%, while in firms with 200-499 employees, penetration reached 33%, and in businesses with less than 200 employees, the figure is 23%.

Sales of IP telephony equipment and services for large corporations in Argentina grew 60 percent in 2005 compared to 2004. According to a February 2006 study, 31.1 percent of large corporations had implemented IP telephony solutions compared to 19.4 percent in February 2005 and 4.8 percent in 2004. Of those companies that have not implemented IP telephony, 25 percent plan to deploy it this year.

In 2007, a group of Argentine telecoms companies launched an IP telephony and converged communications association, Catip. Catip includes Aldea Global, BroadBandTech, Comsat, Cotel, Cooperativa de Mar de Ajó, Cotelcam, CrossFone, Datco, Ertach, Gigared, IFX Networks, Impsat, Infracom, Ip Tel, Iplan, Servicio Satelital, Sky Online, SES Sistemas Electronicos, Telephone 2, TelViso and Wiltel. The association is focused on different issues affecting the adoption of VoIP in the fixed line and mobile sectors as well as the convergence of different service platforms, including IPTV.

As of 2005, almost 1.7 million people use VOIP and instant messaging services in Argentina, with nearly 29% of broadband subscribers using VOIP services. A recent study stated that nearly 40% of VOIP services are used for local communications.

USEFUL CONTACTS

Comision Nacional de Comunicaciones (CNC)
http://www.cnc.gov.ar

Secretariat of Communications
http://www.secom.gov.ar

ARMENIA

VOIP REGULATIONS AND MARKET INFORMATION

VOIP is implicitly made impossible by Armentel's 15-year monopoly on basic telephony. For reference purposes, see the Telecoms Law dated February 1998 at http://www.internews.am/legislation/index.asp.

ArmenTel was set to relinquish its official monopoly on the provision of IP telephony by the end of 2007, due to the relentless rise of illegal operators offering VOIP. According to Director General Oleg Bliznyuk, the telecom provider was the 'monopolist de jure only' in the segment, with many service providers using its network to offer VoIP, often at a poor level of quality. Bliznyuk said that once the monopoly is

removed, the competitive environment will improve and there will be increased sector transparency, with only those providing high levels of service surviving the marketplace.

USEFUL CONTACTS

Ministry of Transport and Communication
http://www.mtc.am

AUSTRALIA

VOIP REGULATIONS AND MARKET INFORMATION

In 2008, revenues from VOIP telephone solutions reached $412 million in the local market. Residential VOIP service revenues accounted for $187 million while revenues from business VOIP services grew to $225 million. Analysts predict that VOIP telephone revenues will grow by 50% annually over the next three years. Approximately 270 companies provide VOIP services in the local market.

At the consumer level, research group Market Clarity forecasts that the number of VOIP subscribers will increase from 1.4 million in July 2007 to 4.8 million in June 2011. At present, free VoIP services such as Skype make up about one million of the subscriber base. Recent surveys have shown that many consumers have heard of VOIP applications such as Skype and are considering becoming VOIP-enabled in the future. The local consumer market will provide good growth opportunities for providers of VOIP solutions and hardware.

While over 70% of the top 200 Australian companies have implemented a VOIP strategy (at very least an internal system), good opportunities exist targeting VOIP solutions to the local SME market. A recent survey conducted by Sensis reveals that only 13 percent of SMEs use VOIP services, but 70 percent of the survey group planned to initiate VOIP services within the next 12 months. As the technology becomes more affordable and mainstream, SMEs will drive the market for VOIP telephone solutions over the next few years.

There are no policies specifically regulating IP telephony or VOIP. However, the Australian government has long considered loosening their licensing regime to encourage broadband network rollouts and increase consumer take-up of VOIP. The Australian Communications and Media Authority (ACMA) issued a discussion paper on VOIP services in late 2008, seeking feedback on issues including clarification of the rules regarding the use of geographical numbers and improved transparency when numbers are switched between operators. The move came after research by ACMA into the provision of VOIP services revealed that some operators were not complying with regulatory requirements such as the provision of number portability and an emergency call service.

USEFUL CONTACTS

Australian Communications and Media Authority (ACMA)
http://www.acma.gov.au

Australian Competition and Consumer Commission
http://www.accc.gov.au

Australian Government Information Management Office
http://www.agimo.gov.au

Department of Communication, Information Technology and the Arts
http://www.dcita.gov.au

AUSTRIA

VOIP REGULATIONS AND MARKET INFORMATION

VOIP is regulated under the Austrian Telecommunications Law. It is regarded as an Internet application and thus does not need a license. The service provider has to notify the regulator of the intended provision of services.

USEFUL CONTACTS

National Regulatory Authority for Telecom and Broadcasting (RTR)
http://www.rtr.at

AZERBAIJAN

VOIP REGULATIONS AND MARKET INFORMATION

VOIP is banned.

USEFUL CONTACTS

Ministry of Communications and Information Technologies
http://www.mincom.gov.az/index.aspx

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BAHRAIN

VOIP REGULATIONS AND MARKET INFORMATION

There are no known laws or efforts to regulate VOIP services in Bahrain.

USEFUL CONTACTS

Ministry of Transportation
http://www.transportation.gov.bh/index.htm

BANGLADESH

VOIP REGULATIONS AND MARKET INFORMATION

The Government of Bangladesh decided to legalize VOIP in December 2003, but will limit the number of companies in order "to maintain high quality service" and to ensure that all calls are directed through the international gateway of the Bangladesh Telephone and Telegraph Board (BTTB). The license fee has not been determined, but the government said it will likely charge much more than the nominal fee of $200 suggested by the Infrastructure Investment Facilitation Center (IIFC).

VOIP is expected to lower international call rates and reduce the financial incentive to buy illegal phone cards, which are widely used in Bangladesh.

USEFUL CONTACTS

Bangladesh Telecommunication Regulatory Commission (BRTC)
http://www.trc.org.bd

Ministry of Posts & Telecommunications
http://www.bangladesh.gov.bd

BELARUS

VOIP REGULATIONS AND MARKET INFORMATION

In September 2005, the General Prosecutors Office completed an investigation into the provision of illegal long-distance VOIP services that took place between August 2004 and February 2005. (Only the government-owned national incumbents are allowed to provide long-distance services.) The government claims financial damages of around US$500,000 to the government-owned telecom operators. The owners of the illegal VOIP business face imprisonment and confiscation of property.

USEFUL CONTACTS

Ministry of Communications and Informatization
http://www.mpt.gov.by/index_en.htm

BELGIUM

VOIP REGULATIONS AND MARKET INFORMATION

There are as yet no specific policies or regulations that apply to IP telephony or voice over the Internet in Belgium. However, as noted above, the ISP must make a declaration to the telecom regulator, BIPT.

USEFUL CONTACTS

Belgian Institute for Postal Services and Telecommunications
http://www.bipt.be

BELIZE

VOIP REGULATIONS AND MARKET INFORMATION

In March 2006, Belize Telecommunications (BTL) has sparked outrage among Internet users by allegedly limiting or blocking the use of VOIP services such as Skype and Vonage. Technicians quoted in the local press claim that BTL has installed hardware and software to disrupt the VOIP services.

USEFUL CONTACTS

Ministry of Communications, Transport, and Public Utilities
Office of Telecommunication
Tel: +02-24938
Fax: +02-24939

Public Utilities Commission
Tel: 501-227-1176
Fax: 501-227-1149
http://www.puc.bz/

BOLIVIA

VOIP REGULATIONS AND MARKET INFORMATION

The government may allow VOIP by 2006.

USEFUL CONTACTS

Superintendencia de Telecomunicaciones (SITTEL)
http://www.sittel.gov.bo

BOTSWANA

VOIP REGULATIONS AND MARKET INFORMATION

There are no current policies or regulations that specifically govern IP telephony or voice over the Internet. As the issue has not been raised in Botswana, it is not possible to say what the government's or the BTA's reaction would be. It is suggested that any firm planning to begin offering IP telephony contact the BTA prior to doing so.

To the best of our knowledge, ISPs or other firms are not currently offering IP telephony services and BTC is not engaged in efforts to develop or test IP telephony services.

USEFUL CONTACTS

Botswana Telecommunications Authority (BTA)
http://www.bta.org.bw

BRAZIL

VOIP REGULATIONS AND MARKET INFORMATION

In Brazil, there is no specific legislation for VOIP services. Anatel, the Brazilian telecommunications regulator, considers VOIP a telecommunications service or simply a value-added service, based in the definition established by the Brazilian General Telecommunications Law (GTL) # 9.472 dated July 16, 1997. This law is the legal telecommunications framework for Brazil. It is important to mention that the definition of telecommunications services established by the GTL is not associated with any technology or any service provision media, but rather with the transmission, emission or receipt concept.

The Brazilian government is already allowing telephone numbers to be matched with VOIP service lines. To provide VOIP services in Brazil, a U.S. company has two options: 1) Open a company in Brazil and purchase a license provided by Anatel; or 2) Partner with a Brazilian company that has already the license to provide this service. There are several small players with a license that would take great benefit of jointly pursuing business opportunities with complementary players.

However, the companies that have purchased the licenses to operate the old Telebras system - fixed switched telephone service (FSTS), are expressing some concerns with VOIP because there are numerous companies offering it without any specific commitments. FSTS companies have specific obligations for the provision of services and are submitted to rigorous inspection in terms of quality services rendered as well as specific regulations while the new companies offering VOIP are not subject to these rules. Anatel, on the other hand, has emphasized several times that the agency does not intend to create an additional law for VOIP services.

In Brazil, the use of VOIP services is still concentrated in the corporate world. According to a recent study conducted by Yankee Group, one in every four Brazilian large corporations already uses VOIP. The growth of VOIP for the end-users, however, is highly dependent on the increase of broadband subscribers, which is still less than five percent of the total population. By 2005, market experts predict that VOIP will become the second option for fixed and mobile telephones.

According to recent studies, the international incoming switched traffic reached approximately 240 million minutes by the end of 2004 in Brazil, while the outgoing VOIP traffic reached approximately 130 million minutes. This generated net revenues of approximately US$20 million. This traffic is expected to increase 40 percent in the next three years reaching net revenues of approximately US$28 million. The Brazilian VOIP equipment market was valued at approximately U$25 million by the end of 2004 and is projected to reach U$58 million by 2006. Of the 123 Brazilian government institutions that do not yet use VOIP, 25 percent plan to invest in the technology in 2006.

USEFUL CONTACTS

Anatel
http://www.anatel.gov.br/english_site/default.asp

Ministry of Communications
http://www.mc.gov.br

BURMA (MYANMAR)

VOIP REGULATIONS AND MARKET INFORMATION

On June 23, 2006, in an effort to reduce declining revenues at MPT, the country's government-controlled Internet providers banned Gmail and VOIP links, which Burmese citizens increasingly use to communicate with overseas contacts. The government of Burma lifted the ban on Gmail on July 3, but maintained its block on VOIP links. The impact will likely be a large increase in frustrated users and a minimal increase in revenues for MPT.

USEFUL CONTACTS

Ministry of Communications, Posts and Telegraphs
http://www.mcpt.gov.mm/

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CANADA

VOIP REGULATIONS AND MARKET INFORMATION

VOIP is allowed. In May 2005, CRTC, announced that it would regulate VOIP service "only when it is provided and used as a local telephone service." According to their decision, incumbent local exchange carriers (ILECs) are not permitted to price their VOIP services below cost. VOIP services, such as those offered by Skype, Vonage, and cable providers will remain unregulated.

CRTC stated that its decision represents "limited regulation for VOIP" and that it would foster competition in Canada's fixed telephony market. Unsurprisingly, Canada's ILECs strongly disagree, saying that CRTC's decision to regulate retail rates for Internet telephony will stifle IP innovation, price competition, and, by extension, consumer choice.

Pursuant to an October 2005 decision, CRTC requires all providers of local VOIP to notify current and prospective customers regarding the availability, characteristics, and limitations of its 911 and E911 services. VOIP providers must comply within 90 days or by January 18, 2005. This decision does not require customer acknowledgement of the providers' notification as the FCC decision does in the United States.

Recently, Vonage Canada called on CRTC to investigate Shaw Communication's decision to charge its customers an additional C$10 per month if they use a third-party VOIP provider such as Vonage Canada. Shaw justified the fee as a "quality of service" enhancement charge to ensure that third-party VOIP service is not disrupted or degraded. Vonage Canada counters that the "tax," which is not applied to Shaw's own VOIP services, raises the cost of third-party VOIP and is anti-competitive.

USEFUL CONTACTS

Canadian Radio Television and Telecommunications Commission (CRTC)
http://www.crtc.gc.ca/eng/welcome.htm

Industry Canada
http://strategis.ic.gc.ca

CHILE

VOIP REGULATIONS AND MARKET INFORMATION

In July 2004, Subtel published its proposed VOIP rules and invited industry comment. The following September, those comments were published. Thirty companies responded, with Telefonica CTC giving the harshest criticism of the proposal.

USEFUL CONTACTS

Subsecretaria de Telecommunicacaiones (SUBTEL)
http://www.subtel.cl

CHINA

VOIP REGULATIONS AND MARKET INFORMATION

In September 1998, MII banned unauthorized telephone and fax services over IP in response to concerns that these cheaper IP phone services were undermining China Telecom's monopoly. Despite the ban, VOIP services proliferated, particularly in southern China. In January 1998, the Fuzhou Intermediate People's Court in Fujian ruled that VOIP is just one of many computer information services and therefore does not fall under monopoly business law. The government has since accelerated the licensing process of authorized IP telephony operators, which is currently limited to four state carriers. Specific laws regulating VOIP include: Technical Regulation for Interconnection of IP Phone Gateway Equipment, and General Requirement for IP Phone/Fax Services.

In September 2005, China Telecom began blocking Skype's VOIP service in Shenzhen, with plans to do so throughout the country. Analysts say this action is a result of China Telecom's lost long-distance revenue, which the company attributes to VOIP providers. The Chinese government is reportedly considering a plan to make formerly unregulated VOIP calls made over PCs illegal. VOIP operators include Jitong Network Communications, China Tietong, China Netcom, China Unicom, Tom Online, and China Cable and Communication Inc (CC&C).

According to China Business News, MII may issue the country's first VOIP license in June 2006, to a firm under the direct management of the state-owned Assets Supervision and Administration Commission. MII also is expected to release VOIP regulations in May. According to the Financial Times, China will not allow calls between computers and conventional telephones to be offered on a retail basis (i.e., paid services rather than free services) for at least two years. Industry insiders say that the government will not issue VOIP licenses until 2008.

USEFUL CONTACTS

Ministry of Information Industry
http://www.mii.gov.cn

COLOMBIA

VOIP REGULATIONS AND MARKET INFORMATION

In Colombia, there has been a dramatic debate during the last seven years whether the services provided over Internet protocol are either services or technologies. The Colombian authorities have come to the conclusion that technologies used over Internet protocol are allowed with the proper license to provide the service for any commercial purpose. Currently, licenses are issued by the Ministry of Communications according to the regulations currently in force, specifically Law 142 of 1994 and Resolution 087 of 1997. Therefore, VOIP is restricted to only three incumbents that hold international voice licenses (Colombia Telecomunicaciones, Empresa de Telecomunicaciones, and Orbitel) until 2008, at which time these licenses will expire. After 2008, it is predicted that VOIP will be the fastest growing technology among value added companies that already provide related telecommunications services.

The above-mentioned legislation and high licensing fees (US$150 million) for long distance/international carriers are the main hurdles to VOIP deployment. However, all local services offered over the Internet are liberalized. VOIP is not subject to any regulatory restriction if it is provided from, or to, a computer. Voice services offered to or from a mobile phone via the Internet are restricted. IP telephony is also permitted for use by private networks that channel calls between employees of the same company.

In May 2006, the Ministry of Communications clarified that operators without a long distance license may only offer VOIP services for PC-to-PC calls. The restriction is likely to last only until August 2007, when Colombia plans to liberalize the long distance market.

The ministry's statement also makes clear that mobile and trunking operators must use the services of a licensed long distance operator to make international long distance calls, and may not use Internet-based value-added services. Long distance operators (ETB, Orbitel, and Colombia Telecom) claim that mobile operator Comcel has indeed been using IP networks other than theirs to complete international calls, and diverting business worth US$70mn from their networks.

Since only three incumbents are allowed to apply VOIP technology services in Colombia, there is very little legal competition. However, the three incumbents face competition from international callback operators. There are no official estimates with respect to these illegal practices.

USEFUL CONTACTS

Comisión de Regulación de Telecomunicaciones (CRT)
http://www.crt.gov.co

Ministerio de Comunicaciones
http://www.mincomunicaciones.gov.co

COSTA RICA

VOIP REGULATIONS AND MARKET INFORMATION

According to Article 121 of the Costa Rican Government Constitution, only the Costa Rican government can provide all communication services, including Internet services. Therefore, the Costa Rican government holds the monopoly in VOIP services through its two state-owned companies: Radiografica Costarricense, S.A (RACSA) and the Instituto Costarricense de Electricidad (ICE). In the event that RACSA or ICE needs a strategic alliance with a foreign company to improve its service, the Costa Rican Congress can study the case and approve it if it is considered necessary. A national VOIP project, part of a telecom expansion plan, has been delayed.

USEFUL CONTACTS

Radiografica Costarricense (RACSA)
http://www.rasca.co.cr

Instituto Costarricense de Electricidad (ICE)
http://www.ice.co.cr/principal.html

COTE D'IVOIRE

VOIP REGULATIONS AND MARKET INFORMATION

There are no specific regulations or policies that apply to Internet. However, VOIP is not allowed for international voice communication. IP telephony is not yet developed due to the inefficiency of telephone lines.

USEFUL CONTACTS

Agence des Telecommunications de Cote d'Ivoire
http://www.atci.ci

CROATIA

VOIP REGULATIONS AND MARKET INFORMATION

Currently, the Telecommunications Act allows the provision of VOIP with a signal delay of 250 milliseconds or more, through equipment connected to the existing fixed telecommunications infrastructure.

It is estimated that VOIP in Central and Eastern Europe represents approximately three percent of total international calls, and this percentage could increase to 24 percent by 2007.

USEFUL CONTACTS

Croatian Telecommunications Agency
http://www.telekom.hr

CZECH REPUBLIC

VOIP REGULATIONS AND MARKET INFORMATION

The term “IP Telephony” is not suitable in the Czech Republic, because “telephony” is reserved for denoting standard public telephone services, which are subject to an individual license. Internet voice communication is, similarly to data communications via the Internet, subject to the GP-22 general license.

There are no known efforts to regulate voice over Internet protocol. The Czech Republic is one of the few countries in Central and Eastern Europe to have deregulated their telecom industry.

USEFUL CONTACTS

Czech Telecommunication Office
http://www.ctupraha.cz

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DENMARK

VOIP REGULATIONS AND MARKET INFORMATION

Denmark’s Department of Science and Technology (DST) reported that one million Danes are expected to move from traditional voice services to IP voice by the end of 2005. According to DST, around 200,000 Danish end users have switched to IP-based voice since March 2004. Broadband operators are behind with new initiatives to stimulate migration to IP telephony with fixed-rate packages that start at around 15 euros per month, offering calls to both traditional landlines and IP telephones.

USEFUL CONTACTS

National IT and Telecom Agency
http://www.itst.dk

DOMINICAN REPUBLIC

VOIP REGULATIONS AND MARKET INFORMATION

The Dominican Institute for Telecommunication (Instituto Dominicano para las Telecomunicaciones, INDOTEL) is currently evaluating a new regulation that will cover the VOIP services in the Dominican Republic.

USEFUL CONTACTS

INDOTEL
http://www.indotel.org.do

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ECUADOR

VOIP REGULATIONS AND MARKET INFORMATION

The National Telecommunications Council (CONATEL) is the FCC equivalent and regulator for the telecommunications sector. The fixed telephone services regulations apply for VOIP services that allow companies and/or individuals to have this service within their own organizations. However, in order to

offer this service commercially, companies need a license from CONATEL. The service is only permitted when offered through the authorized telephone operators (Andinatel, Pacifictel, and Etapa).

USEFUL CONTACTS

National Telecommunications Council (CONATEL)
http://www.conatel.gov.ec

Superintendencia de Telecomunicaciones (Suptel)
http://www.supertel.gov.ec

EGYPT

VOIP REGULATIONS AND MARKET INFORMATION

VOIP is not legal unless a license is obtained from Telecom Egypt. The Egyptian parliament passed a telecommunication law in February 2003 to regulate VOIP and other issues. (The text can be downloaded from the regulator's website.)

USEFUL CONTACTS

National Telecommunication Regulatory Authority (TRA)
http://www.tra.gov.eg

ETHIOPIA

VOIP REGULATIONS AND MARKET INFORMATION

IP telephony is not allowed. Legalizing this prohibition is in progress. The dominant telecom carriers are not engaged in efforts to develop or test IP telephony services in Ethiopia.

USEFUL CONTACTS

Ethiopian Telecommunications Agency
http://www.telecom.net.et/~eta

EUROPEAN UNION

VOIP REGULATIONS AND MARKET INFORMATION

EU telecom regulators are grappling with the challenge of how to regulate VOIP services. VOIP straddles the fault line between the traditionally regulated telephony market and the relatively unregulated data services market. European regulators are trying to determine how the EU New Regulatory Framework for Electronic Communications (NRF) applies to VOIP.

While no longer strictly "new," the NRF can still be described as new in the sense that it represents a marked difference from previous regulations. The intention was to establish rules that better reflect the technological developments enabling data to be transported over a variety of networks and accessed through different terminals. In particular, the NRF switches the regulatory focus from the traditional PSTN to all electronic communications networks. The NRF now applies to more than just telecom; it covers all electronic communications services. The NRF defines these services as "normally provided for remuneration, which consists wholly, or mainly, in the conveyance of signals on electronic communications networks." The NRF defines electronic communications networks as "transmission

systems and, where applicable switching or routing equipment and other resources which permit the conveyance of signals by wire, by radio, by optical or by other electromagnetic means, including satellite networks, fixed (circuit and packet-switched, including Internet) and mobile terrestrial networks, electricity cable systems, to the extent that they are used for the purpose of transmitting signals, networks used for radio and television broadcasting, and cable television networks, irrespective of the type of information conveyed."

In it's paper on the treatment of VOIP, the European Commission divided VOIP into four categories: 1) PC to PC, using common software (and without ongoing remuneration); 2) VOIP within private corporate networks; 3) public operators use of VOIP to carry PSTN traffic over their core networks; and 4) publicly available VOIP services (i.e., VOIP services that provide access to and from "normal" telephone numbers). It is the fourth category that is covered by the NRF, although there is still a question of how to apply the rules.

There are two main bodies that will decide how to apply the NRF to VOIP: the European Commission and the European Regulators Group (ERG). The Commission has a list of frequently asked questions on VOIP at http://www.europa.eu.int/rapid/pressReleasesAction.do?reference=MEMO/05/46&format=HTML&aged=0&language=EN&guiLanguage=en. The ERG released a statement on VOIP, which can be found at http://erg.eu.int/doc/publications/erg12_press_release.pdf.

As a follow up to its 2004 consultation, the Commission is expected to issue non-binding guidelines on the regulation of VOIP before the end of 2005. As more and more networks switch to IP it is likely that IP enabled services such as VOIP will also feature in the Commission's review of the NRF, which is slated for 2006. In the meantime, the Commission is closely following developments in the EU-25 to ensure that no barriers to the introduction of VOIP services are created.

On the equipment side, the European IP telephone market increased to $79.3 million in the first quarter of 2005, up from $77.1 million in the fourth quarter of 2004. Cisco continues to dominate the market with a 52 percent market share.

USEFUL CONTACTS

Europe's Information Society
http://europa.eu.int/information_society/index_en.htm

European Regulators Group (ERG)
http://erg.eu.int/index_en.htm

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FINLAND

VOIP REGULATIONS AND MARKET INFORMATION

The Telecommunications Market Act does not cover minor telecommunications functions, such as voice transmission in a data transmission network where it is not a substantial portion of the network's functions.

According to the Ministry of Transport and Communications, Finland has never regulated VOIP services and the services have been free for all Internet operators. There are no plans to regulate VOIP services in the near future. Mobile VOIP should be available in Finland some time in 2006.

USEFUL CONTACTS

Ministry of Transport and Communications
http://www.mintc.fi

FRANCE

VOIP REGULATIONS AND MARKET INFORMATION

While new entrants were the first to provide Internet telephony, traditional telecommunications players (manufacturers and operators) have now made significant advances in terms of equipment and service offerings.

USEFUL CONTACTS

ART (Telecommunications Regulation Authority)
http://www.art-telecom.fr

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GERMANY

VOIP REGULATIONS AND MARKET INFORMATION

VOIP, with its different technical possibilities (PC to PC, PC to phone, and phone to phone), is seen both as a telecommunications service from the technical point of view and as a so-called tele-service from a content point of view.

Telecommunications services are subject to the German Telecommunications Act (Telekommunikationsgesetz/TKG). The Regulatory Authority for Telecommunications and Post (RegTP) is the authority responsible for ensuring compliance with the Telecommunications Act.

Tele-services are subject to the Teleservices Act, which does not require notification or licensing. The physical location of the tele-service provider determines which state authority ("Landesmedienanstalt") has jurisdiction. There is no federal authority appointed to enforce this act.

It is still undecided in Germany whether VOIP is to be regarded as voice telephony and, as such, would fall under the Telecommunications Act. While VOIP is in a gray area, it is still allowed. Should VOIP ultimately be deemed to constitute voice telephony, providers offering VOIP would have to obtain a telecommunications license pursuant to Section 6 of the TKG. Prevailing opinion seems to be that VOIP does not constitute voice telephony, primarily due to the fact that switching and transmission do not take place in real-time. Additionally, as of yet, there are very few commercial service providers. RegTP shares this opinion (which was originally published by the European Commission), but is prepared to revise this position if an alternative interpretation holds sway.

While governmental agencies are guarded and cautious over prospects for VOIP and what is the appropriate measure of regulation, several providers have entered the market with VOIP services. VOIP providers tend to focus on business clients, and will continue to do so until regulators can better ensure bitstream access that would enable them to offer attractive bundled service packages.

USEFUL CONTACTS

Regulierungsbehoerde für Telekommunikation und Post (RegTP)
http://www.regtp.de

GHANA

VOIP REGULATIONS AND MARKET INFORMATION

The government is currently drafting a new telecom policy to address VOIP, but the technology is still in a regulatory gray area. There are currently about 30 ISPs operating in this gray area, offering internal VOIP services for corporate users. These firms operate in a nebulous area of VOIP that is not clearly legal or illegal and risk confrontation with the NCA. Ghana has a particularly large VOIP grey market estimated at approximately $15-25 million a year in 2003.

The NCA's official position (thus far) on VOIP is: 1) VOIP is allowed within the corporate VPN setting; 2) licensed international gateway operators are free to use whatever technology they choose to terminate/originate their international traffic in or out of the country (including VOIP technology), within the right interconnection agreements with other carriers; 3) ISPs, Internet Cafes are not allowed to terminate international voice traffic on the national PSTN or any other public telephone network; 4) a VOIP licensing and regulatory framework is needed to enable qualified operators (ISPs, Internet cafes) to offer VOIP services to their clients while contributing to the development of the access network and telecom development in the country in general; 5) the New Telecom Policy should be available by year-end 2005, with VOIP addressed under "international telecommunications."

Since, Internet telephony is considered a voice service, the only legal providers would be Ghana Telecom, Westel, or Capital Telecom. Illegal VOIP providers are mainly targeting international traffic in Accra. Only Ghana Telecom and Westel are licensed to provide international long-distance services. Ghana Telecom, in particular, claims that illegal VOIP is undercutting their profits. Statistics show that revenue from international calls dropped from $42 million in 1998 to $14.4 million in 2002. However, there is very little possibility that the NCA can stop the proliferation of VOIP and other technologies (such as IM, SMS, and email) that decrease demand for IDD using the PSTN.

USEFUL CONTACTS

National Communications Authority
http://www.nca.org.gh

GREECE

VOIP REGULATIONS AND MARKET INFORMATION

Local ISPs may offer IP telephony services legally to closed user groups, a service otherwise known as "corporate voice." The Greek national operator, OTE, is not developing IP telephony services.

USEFUL CONTACTS

National Telecommunications and Post Commission
http://www.eett.gr

GUATEMALA

VOIP REGULATIONS AND MARKET INFORMATION

Certain concessions are required in order to provide VOIP services.

USEFUL CONTACTS

Superentendencia de Telecomunicaciones (SIT)
http://www.sit.gob.gt

Ministerio de Comunicaciones Infraestructura y Vivienda
http://www.civ.gob.gt

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HONDURAS

VOIP REGULATIONS AND MARKET INFORMATION

State-owned incumbent Hondutel is reportedly losing long-distance market share to the country's Internet cafés, which offer a similar service that is up to 70 percent cheaper. Hondutel has plans to upgrade to a full IP telephony platform in 2006.

USEFUL CONTACTS

Comision Nacional de Telecomunicaciones (CONATEL)
http://www.conatel.hn

HONG KONG

VOIP REGULATIONS AND MARKET INFORMATION

According to the Office of the Telecommunications Authority, which regulates the Hong Kong telecommunications industry, there are no laws regulating VOIP technology. The Hong Kong Government is technology neutral. It does not favor any form of telecommunications technology. Operators, regardless of the type of technology they deploy (e.g., VOIP), who would like to provide voice or data network services, are required to apply for specific licenses through OFTA.

In January 2006, OFTA announced the introduction of a new, two-class services-based operator license for VOIP. Class 1 license-holders will be required to fulfill the same licensing conditions as fixed telecommunication network services (FTNS) licensees. Class 2 licenses are for those offering services that do not have the same attributes as regular fixed line services and are therefore subject only to minimal licensing conditions. To help consumers identify the class of services provided, class 2 licensees have been allocated the prefixes "57" and "58." Class 1 providers will share the same number allocations as FTNS licensees, namely "2" and "3." Number portability will be only available for class 1 services.

In early September 2004, OFTA decided not to levy local access charges on VOIP calls. PCCW and other fixed line service providers protested the decision. PCCW, in particular, has threatened legal action against OFTA in an effort to counter the ever-growing VOIP competition.

USEFUL CONTACTS

Office of the Telecommunications Authority (OFTA)
http://www.ofta.gov.hk

HUNGARY

VOIP REGULATIONS AND MARKET INFORMATION

On July 28, 1999 the modification of the Telecommunications Law was enacted allowing the use of the Internet for telephony. According to the law, IP service providers are required to inform customers that IP based phone services provide less quality (e.g., longer than usual voice delays, interruptions of over one percent of call time) than traditional fixed line services.

According to the paragraph three of the Hungarian Telecommunications Act, the provision of VOIP services falls under the category of "other public utility telecommunications activities" and as such, providers do not require an operation permit in order to offer such services. Therefore, almost anyone can offer VOIP services. Only the telecommunications activities that VOIP providers also engage in are regulated, not VOIP provision itself.

USEFUL CONTACTS

Communications Authority (HIF)
http://www.hif.hu

Ministry of IT and Telecommunications
http://www.ihm.gov.hu

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INDIA

VOIP REGULATIONS AND MARKET INFORMATION

India allowed ISPs to provide VOIP in April 2002. ISPs must apply for an ITSP (Internet Telephony Service Provider) license, and more than 40 ISPs offer outgoing international calls from PCs over the public Internet. The service is regulated as a value-added ISP application. However, there are limitations on the service. VOIP is permitted for end users and service providers. Internet telephony is considered an application service, which ISP customers can use from a PC or other IP-based customer premises equipment (CPE). In addition, there are Quality of Service (QoS) requirements for VOIP, which are available on the Telecom Regulatory Authority of India (TRAI) website.

PC-to-PC calls, both within and outside India, are allowed. PC to telephone calls are allowed only if the telephone is outside India. IP voice calls from an IP-based H.323/SIP phone or an IP endpoint (softphone) to another H.323/SIP softphone also connected to the Internet is legal. However, it is illegal to make a call from an IP phone to a PSTN phone. TRAI wants to prevent VOIP providers and users from physically employing the switched services of the PSTN. This limitation becomes critical for business users, since they are forced to maintain a PBX for voice and a separate data network. There is no defined limitation on the use of Internet protocol for backhaul by any licensed telecom carrier. In other words, using Internet protocol to access the network is heavily regulated, while transmission using the technology is not.

Regulations on Internet telephony are available at the Ministry of Communications and Information Technology website. The Indian government has noted that Internet telephony service is different in nature, scope, and kind from real time voice services provided by operators licensed to provide basic voice services. The regulator has not established tariffs for Internet telephony.

According to recent news from India, various telecom regulations are relaxing, including those for Internet protocol. In November 2005, Minister of Communications Dayanidhi Maran announced that telephone service companies, access-providers, and others can now use IP technology on their backbone networks.

USEFUL CONTACTS

Telecom Regulatory Authority of India
http://www.trai.gov.in

Ministry of Communications and Information Technology, Department of Telecommunications
http://www.dotindia.com

INDONESIA

VOIP REGULATIONS AND MARKET INFORMATION

VOIP providers are required to apply for a license from the Directorate General of Post and Telecommunication (DGPT).

USEFUL CONTACTS

Ministry of Communication and Information Technology (MCIT)
http://www.depkominfo.go.id

Directorate General of Posts and Telecommunication (DGPT)
http://www.postel.go.id

IRELAND

VOIP REGULATIONS AND MARKET INFORMATION

The current telecom law is the Communications Regulation Act 2002. The Commission for Communications Regulation (ComReg) has drafted guidelines for the treatment of consumers by VOIP service providers, available at http://www.odtr.ie/_fileupload/publications/ComReg0550.pdf. ComReg also has a VOIP guide available at http://www.odtr.ie/_fileupload/publications/ComReg04103a.pdf. There is also a paper on VOIP services, covering numbering and related issues, at http://www.odtr.ie/_fileupload/publications/ComReg04103a.pdf.

On March 5, 2006, ComReg published a consultation paper that examines the existing framework for VOIP services. The regulator acknowledges the growing importance of such services, in particular to the business sector, and wants to improve competition and enhance choice for consumers by identifying where further action needs to be taken. The paper is available at http://www.comreg.ie/whats_new/default.asp?ctype=5&nid=102281.

USEFUL CONTACTS

Commission for Communications Regulation (ComReg)
http://www.odtr.ie

ISRAEL

VOIP REGULATIONS AND MARKET INFORMATION

Preparing a VOIP policy is one of the Ministry of Communications' goals for the coming year. VOIP will become more common with the entrance of ISPs into voice services. In November 2004, the Ministry issued a paper on licensing of telephony services provided over broadband access (available on their website at http://www.moc.gov.il/new/documents/pol_22.6.05.pdf). According to the paper, VOIP services may be provided under a special general license, with operators paying an interconnection fee to

Bezeq. Operators are not required to pay for the use of the incumbent's network. Bezeq itself will only be allowed to offer VOIP services after May 1, 2007, or when its fixed line market share falls below 85 percent, whichever is soonest.

According to a local paper, the Ministry postponed a scheduled debate on the VOIP regulation due to Prime Minister Ariel Sharon's poor health. With Sharon in the hospital, Acting Prime Minister Ehud Olmert is responsible for the communications portfolio, but VOIP is not a top priority for him. Fixed line operators HOT, Bezeq, and Bezeq International are all expected to attend the hearing, alongside numerous cable operators and other interested parties, including ISPs and mobile operators. The key issues to be on the agenda include interconnection tariffs and the licensing of VOIP operators.

USEFUL CONTACTS

Ministry of Communications
http://www.moc.gov.il

ITALY

VOIP REGULATIONS AND MARKET INFORMATION

In May 2005, the telecom regulator, AGCOM, redefined its guidelines for VOIP operators. Under the guidelines, IP calls made equal to standard fixed line calls, and VOIP operators face the same obligations as traditional providers. The new legislation also guarantees number portability, number identification, and "wiretapping" of IP lines for judicial monitoring purposes.

While the telephony boom in Italy to date has centered on fixed and mobile services, AGCOM estimates that there are currently around 50,000 VOIP subscribers in Italy. ISPs have been focused on offering other services and IP telephony proposals and projects have not been well developed.

Some carriers have experimented with the use of IP telephony but have not rolled out any major programs. According to one industry source: "The change in attitude of the Italian carriers towards IP telephony will depend mainly on the massive adoption by other European carriers and by some important signal from the market." Industry sources also suggest that Italian ISPs will not offer IP telephony services unless they can be packaged with other services that can then be more easily sold to their customers.

USEFUL CONTACTS

Communications Regulatory Authority (AGCOM)
http://www.agcom.it

Ministry of Communications
http://www.comunicazioni.it/en

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JAMAICA

VOIP REGULATIONS AND MARKET INFORMATION

VOIP is allowed with a license. The Government of Jamaica has introduced a telecom tax to raise $150 million over three years to pay for the rollout of a nationwide broadband IP network.

USEFUL CONTACTS

Office of Utilities Regulation
http://www.our.org.jm

JAPAN

VOIP REGULATIONS AND MARKET INFORMATION

There is no specific VOIP law. However, MIC administers the Telecommunications Business Law, which does apply to VOIP services. IP telephony has become the preferred method for providing voice services due to its cost-efficiency. Japan's domestic operators are facing increased competition from VOIP.

The Japanese government is considering plans that would require former monopoly fixed line operator Nippon Telegraph and Telephone (NTT) to give competitors access to its new high-speed Internet network and related infrastructure. NTT plans to launch the network as early as March 2008. NTT is reportedly not making further investment in copper infrastructure in favor of IP networks. The company has been threatened with a possible break-up by the government in order to foster competition.

Of the total worldwide VOIP users, about 80 percent are in Japan. As of 2005, there are an estimated 10 million VOIP subscribers in Japan.

USEFUL CONTACTS

Ministry of Internal Affairs and Communications (MIC)
http://www.soumu.go.jp/english

JORDAN

VOIP REGULATIONS AND MARKET INFORMATION

Although illegal, Internet telephony and callback services are popular and difficult to monitor or block. Given the large number of Jordanians with overseas relatives and JTC's high international phone rates, it is likely that unauthorized Internet voice services will increase in popularity.

USEFUL CONTACTS

Telecommunications Regulatory Commission (TRC)
http://www.trc.gov.jo

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KENYA

VOIP REGULATIONS AND MARKET INFORMATION

After the end of Telkom Kenya's monopoly in June 2004, CCK legalized VOIP and also announced that the service will remain unregulated, at least for most service providers. For those services that will run on the PSTN, there may be some regulation, while so-called "pure VOIP" (i.e., PC to PC) will remain unregulated. This move was done to bring down telecom services prices and foster competition in the market. Current ISP license holders can contact the CCK to amend their licenses to reflect these changes in the telecom regulations.

The legalization of VOIP has made international calling rates plummet by roughly 80 percent. Telkom Kenya currently charges 90 cents per minute for calls to the United States, while VOIP firms charge around 25 cents per minute.

USEFUL CONTACTS

Communications Commission of Kenya (CCK)
http://www.cck.go.ke

KYRGYZ REPUBLIC

VOIP REGULATIONS AND MARKET INFORMATION

There are no laws or efforts to regulate VOIP services in the Kyrgyz Republic.

USEFUL CONTACTS

State Agency for Communications
http://www.gas.gov.kg

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LEBANON

VOIP REGULATIONS AND MARKET INFORMATION

Voice over Internet protocol and IP telephony is banned in Lebanon. Lebanese law provides the Ministry of Telecommunications with a monopoly over the fixed telephone network (local and international calling). Any equipment supporting IP telephony needs prior approval from the Ministry of Telecommunications. The end user is asked to submit a letter of intent to the Ministry stating that the product will not be used for VOIP, but rather as an internal switchboard in accordance with Ministry regulations.

USEFUL CONTACTS

Ministry of Telecommunications
http://www.mpt.gov.lb

LITHUANIA

VOIP REGULATIONS AND MARKET INFORMATION

Broadband service providers are the main VOIP providers in Lithuania.

USEFUL CONTACTS

Communications Regulatory Authority
http://www.radio.lt or http://www.rrt.lt

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MACEDONIA

VOIP REGULATIONS AND MARKET INFORMATION

In April 2005, On.net announced the launch of fixed telephony services, but provided no details other than saying all international calls would have a fixed price.

USEFUL CONTACTS

Ministry of Transport and Communications
http://www.mtc.gov.mk/eng/index-eng.html

MALAYSIA

VOIP REGULATIONS AND MARKET INFORMATION

Under the Communications and Multimedia Act of 1998, VOIP service providers need an Application Service Provider (ASP) Individual license for the provision of VOIP service. Existing telecommunications operators are allowed to provide VOIP services under the license they were issued under the repealed Telecommunications Act of 1950. The government agency that has jurisdiction over this is the Malaysian Communications and Multimedia Commission (MCMC).

VOIP users can make peer-to-peer calls, as well as call mobile and fixed line phones. However, they are unable to receive calls from mobile and fixed line users. MCMC is looking into this issue.

USEFUL CONTACTS

Malaysian Communications and Multimedia Commission (MCMC)
http://www.cmc.gov.my

MAURITIUS

VOIP REGULATIONS AND MARKET INFORMATION

There are currently no written regulations governing IP Telephony or voice over the Internet.

USEFUL CONTACTS

Information and Communication Technologies Authority (ICTA)
http://www.icta.mu

Ministry of Telecommunications and Information Technology (MTIT)
http://ncb.intnet.mu/mitt.htm

MEXICO

VOIP REGULATIONS AND MARKET INFORMATION

At this time there are no laws that specifically regulate VOIP. It is allowed without a license. The Mexican Association for Information Technologies Industries (AMITI-Asociación Mexicana de la Industria de Tecnologías de Información) is discussing the possibility of drafting a bill to regulate all types of transactions over the Internet. Still, COFETEL has established that it is illegal for anyone to offer

telephone services without the appropriate license. Independent of the technology used, anyone offering voice through the PSTN requires a license from the Ministry of Communications and Transport (Secretaria de Comunicaciones y Transportes-SCT). The law establishes that in order for an ISP or cable TV operator to be able to offer voice services, it has to do so through a partnership with a fixed-line operator, mainly Telmex, Avantel, Alestra (AT&T), Axtel, or Maxcom.

The Mexican market for VOIP was US$2.1 million in 2000 and is estimated to reach US$26 million in 2004. Along with legislation to block the development of specialized VOIP providers (requiring the above-mentioned fixed-line partnership), broadband access penetration is the main inhibitor to VOIP deployment to residential and individual users. Currently, VOIP serves predominantly corporate users seeking to reduce telecom service expenses.

In June 2005, COFETEL published a blacklist of illegal VOIP providers, which they classify as any VOIP provider operating without a long-distance concession license. The list includes around 40 companies, including: Protectolada; Todito; Esmas; Mercado Libre; and Vonage. Todito, a Mexican ISP, has protested its classification as an illegal VOIP provider. Meanwhile, Mexican cable TV providers are complaining that they still do not have permission to provide VOIP services, despite having requested it over two years ago.

USEFUL CONTACTS

Comisión Federal de Telecomunicaciones (COFETEL)
http://www.cft.gob.mx

Secretaria de Comunicaciones y Transportes (SCT)
http://portal.sct.gob.mx

MOROCCO

VOIP REGULATIONS AND MARKET INFORMATION

Sale of VOIP is the exclusivity of operators holding a license to operate telecommunication (telephone) networks. However, VOIP is allowed for local networks (LANs). Any other sale of VOIP is illegal. The Agence Nationale de Reglementation des Telecommunications is in charge of telecommunications licenses and VOIP.

USEFUL CONTACTS

Agence Nationale de Reglementation des Telecommunications (ANRT)
http://www.anrt.net.ma

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NETHERLANDS

VOIP REGULATIONS AND MARKET INFORMATION

There are no policies or regulations that apply to IP telephony or voice over the Internet. OPTA is currently studying the subject. IP telephony is being offered in the Netherlands on a limited scale. Nevertheless, OPTA predicts that IP telephony will account for an increasing percentage of the Dutch telephony market and that VOIP growth in the Netherlands will outpace that of their European neighbors, due in part to high Dutch broadband penetration (45 percent). OPTA hopes to increase competition in

voice services through VOIP. By the end of 2007, industry analysts predict that between 10 and 30 percent of all fixed-line telephone calls will be made via VOIP.

According to Telecompaper, the Netherlands had 853,000 consumer VOIP subscriptions by the end of March 2006. The Dutch residential VOIP market was forecasted to double in 2006 to around 1.6 million. Dutch cable companies have been responsible for the largest number of new VOIP users.

USEFUL CONTACTS

Onafhankelijke Post en Telecommunicatie Authoriteit (OPTA)
http://www.opta.nl

NEW ZEALAND

VOIP REGULATIONS AND MARKET INFORMATION

According to the Ministry of Economic Development, point-to-point communications such as telephone and videoconferencing will increasingly utilize IP networks, for increased efficiency, lower costs, and the ability to deliver a range of services over one network. Given this, the Ministry places importance on the availability of broadband. In their estimation, demand for broadband services is dependent upon pricing and the availability of applications that deliver real benefits. In rural areas, those benefits would be improved access to information and services, and the potential to deliver telephone and high-speed Internet services over broadband networks. In the short term, broadband rollout is being driven by the education sector, where demand is clear and video conferencing and Internet access are already available.

USEFUL CONTACTS

Ministry of Economic Development
http://www.med.govt.nz

NIGERIA

VOIP REGULATIONS AND MARKET INFORMATION

Nigeria's current applicable telecom laws are the Nigerian Communications Act 2003 and the Wireless Telegraphy Act 1990. Internet services are deregulated. A license is required in order to operate Internet exchange provider or ISP. All licensing documents can be downloaded from the NCC website, as well as the text of Nigerian telecom laws.

USEFUL CONTACTS

Nigerian Communications Commission (NCC)
http://www.ncc.gov.ng

NORWAY

VOIP REGULATIONS AND MARKET INFORMATION

VOIP is allowed. No license is required. There are no VOIP regulations.

USEFUL CONTACTS

Norwegian Post and Telecom Authority
http://www.npt.no

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PAKISTAN

VOIP REGULATIONS AND MARKET INFORMATION

Voice telephony over the Internet is currently not allowed. However, the PTA is reviewing its policy regarding the transmission of facsimile messages through the Internet, as this mode does not involve any real time communication.

Officially none of the ISPs in Pakistan offer or advertise IP telephony services. However, out of the total 80,000 Internet users in Pakistan in 2003, around 5,000 were known to be sending voice messages from computer to computer.

USEFUL CONTACTS

Pakistan Telecommunications Authority
http://www.pta.gov.pk

PANAMA

VOIP REGULATIONS AND MARKET INFORMATION

VOIP is allowed, subject to 12 percent services tax. The telecom regulatory authority has issued a decree to regulate VOIP, but it is being challenged before the Supreme Court.

USEFUL CONTACTS

Ente Regulador de los Servicios Publicos
http://www.enteregulador.gob.pa

PERU

VOIP REGULATIONS AND MARKET INFORMATION

There is no a specific law covering only VOIP issues. The law that applies to VOIP is Supreme Decree # 013-93-TCC, article 3, 5, and 7.

IP telephony services are currently being offered by domestic ISPs on a very limited scale. The dominant telecom carriers are also offering VOIP services.

USEFUL CONTACTS

Ministerio de Transportes y Comunicaciones (MTC)
http://www.mtc.gob.pe

Organismo Supervisor de Inversión Privada en Telecomunicaciones (OSIPTEL)
http://www.osiptel.gob.pe

PHILIPPINES

VOIP REGULATIONS AND MARKET INFORMATION

In 2005, several measures were proposed to deregulate the market, including House Bills 3476 and 3644, which were designed to open commercial VOIP to non-telecommunications companies. In August 2005, NTC changed the VOIP classification from a voice service to a value-added service, effectively opening up the VOIP market and allowing companies to provide services without having to obtain a license. NTC hopes to encourage deployment of VOIP services and therefore lower prices and boost competition in the telecom market. Telecom companies have complained that competitors should not be allowed to provide voice services without a license. The leading providers of VOIP services tend to be non-telecom companies. In May 2005, the government-owned Telecommunications Office (Telof) announced plans to launch VOIP services in underserved rural areas of the Philippines.

In 2006, a proposed bill that would deregulate VOIP is nearing approval, after having passed its second reading in the House of Representatives. In addition, NTC plans to require VOIP service providers to roll out services to so-called missionary areas (to be determined by the regulator) in order to receive operating licenses. NTC hopes this will encourage VOIP development and reduce the cost of telecom services.

USEFUL CONTACTS

Department of Transportation and Communications
http://www.dotc.gov.ph

National Telecommunications Commission (NTC)
http://www.ntc.gov.ph

Telecommunications Office (Telof)
http://www.telof.gov.ph

POLAND

VOIP REGULATIONS AND MARKET INFORMATION

Current telecommunications legislation and regulations do not regulate IP telephony or VOIP. However, the Polish government takes the position that in case of data transmission carrying voice, the voice is considered to be the content of transmitted message. The Polish government does not currently take any actions against companies providing voice over the Internet services. Although, the official point of view is that voice services remain a part of public services and are very strictly regulated by law. (Public telephone operators obtain licenses through a tender process paying substantial fees for these licenses).

Some ISPs offer IP telephony services, mainly in dedicated networks. IP telephony services are considered to be at an early stage of development and the availability of these services is not well documented.

VOIP is becoming popular, even though clients of telecommunications operators often do not realize when IP protocol technology is being used because of its seamless nature. Market analysts estimate that over 25 percent of Poland's international voice traffic now moves over VOIP.

USEFUL CONTACTS

Ministry of Infrastructure
http://www.mi.gov.pl/en

Office of Telecommunications and Post Regulations
http://www.urtip.gov.pl

PORTUGAL

VOIP REGULATIONS AND MARKET INFORMATION

At present, there is no legislation to cover this subject. It has proven difficult to get concrete answers as to which, if any, carriers are currently offering VOIP services. The projects are most likely considered confidential so as to avoid giving notice to competitors ahead of time.

USEFUL CONTACTS

Autoridade Nacional de Comunicações (ANACOM)
http://www.icp.pt

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QATAR

VOIP REGULATIONS AND MARKET INFORMATION

In April 2005, monopoly fixed line provider Qatar Telecom (Q-Tel) worked with local police to raid and shut down unauthorized VOIP service providers (mostly shops and cyber cafés. Q-Tel claimed that reductions in its ADSL pricing led to an increase in customers using those lines for illegal VOIP.

USEFUL CONTACTS

Ministry of Communications and Transport
http://english.mofa.gov.qa/details.cfm?id=107

Supreme Council for Communication and Information Technology
http://www.ict.gov.qa

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RUSSIA

VOIP REGULATIONS AND MARKET INFORMATION

The Ministry of Information Technologies and Communications is being criticized by industry for the introduction of a VOIP licensing regime that, they claim, puts up barriers to entry and is designed specifically to protect Rostelecom and other incumbent telecom companies. Critics say the regulations will make it difficult for smaller, independent VOIP providers to operate legally and will reduce investment in IP networks.

Internet telephony is rapidly developing in Russia. Since the quality of communications in Russia is traditionally lower than in the rest of the world, the difference in the quality of sound between an Internet telephone and a traditional network would hardly be noticed. The major impediment for IP telephony in Russia is insufficient development of the Internet infrastructure. VOIP service quality is lower in Russia

because there is little broadband access. However, providers can gain access to leased lines to address this problem. VOIP tends to be delivered by ISPs.

USEFUL CONTACTS

Ministry of Information Technologies and Communications
http://english.minsvyaz.ru/enter.shtml

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SAINT KITTS & NEVIS

VOIP REGULATIONS AND MARKET INFORMATION

VOIP is allowed.

USEFUL CONTACTS

Eastern Caribbean Telecommunications Authority (ECTEL)
http://www.ectel.info

National Telecommunications Regulatory Commission
http://www.ectel.info/ntrckn/index.htm

SENEGAL

VOIP REGULATIONS AND MARKET INFORMATION

There are no VOIP regulations. In fact, Sonatel regulates the IP telephony since it controls Internet access. IP telephony is not allowed for commercial purposes. Sonatel is intensely engaged into developing IP telephony services.

USEFUL CONTACTS

Sonatel
http://www.sonatel.sn

SINGAPORE

VOIP REGULATIONS AND MARKET INFORMATION

In June 2005, IDA announced a new policy framework for IP telephony. Facilities-based operators (FBOs) and services-based operators (SBOs) can be licensed under the new framework.

To encourage adoption in this emerging technology, IDA's framework includes minimal regulatory obligations to address certain public and regulatory concerns. Operators providing IP telephony services using level '3' numbers are not required to provide number portability, emergency service connection, directory assistance, and printed directory services, or conform to quality of service (QoS) levels set by IDA. However, operators must provide clear information to their subscribers on their services, for example whether their service allows access to emergency services and whether it meets the minimum QoS levels set by IDA for local fixed-line services.

FBOs who wish to use 8-digit level '6' numbers for IP telephony services can do so, if they provide number portability, connection to emergency services, directory assistance, and printed directory services, and ensure IDA QoS levels. FBOs must also ensure interconnection so users can receive and make calls to fixed line and mobile subscribers. These requirements are similar obligations for local fixed line service providers. More details on IDA's IP telephony framework can be found on their website under "Policy & Regulation" and "Consultation Papers."

USEFUL CONTACTS

Infocomm Development Authority of Singapore (IDA)
http://www.ida.gov.sg

SLOVAK REPUBLIC

VOIP REGULATIONS AND MARKET INFORMATION

The Telecommunication Office of the Slovak Republic regulates VOIP.

USEFUL CONTACTS

Telecommunication Office of the Slovak Republic
http://www.teleoff.gov.sk

SOUTH AFRICA

VOIP REGULATIONS AND MARKET INFORMATION

In 2004, the South African Minister of Communications announced a major liberalization of the telecom sector that effectively legalized VOIP for the first time in South Africa. In the wake of the announcement, the market has been in flux as new and existing value added network service providers (VANs) have sought to position competing technologies and services as the standard and to position themselves to compete for a new range of opportunities. Many see VOIP as the fastest growing technology application among South African companies in 2005 and believe that it will reduce communication costs in the country by around 30 to 40 percent. The trend towards VOIP as a major force will in part be driven by business uptake of converged networks. There is some ambiguity in the new regulations and there will likely be further clarification of exactly what this new liberalization will affect short- and long-term opportunities for U.S. firms.

South Africa's fixed line operator, Telkom SA, has launched international VOIP centers and has stated that it plans to become a regional telecom hub for the African continent. This is an interesting counter strategy considering that international voice traffic has been under considerable attack from callback operators and multinational companies running VOIP over their private networks. Telkom also recently concluded trials of VOIP services over a WiMAX network in conjunction with Verso Technologies and Saab Grintek.

The major VOIP services end-users include the financial services sector, the retail sector, the government, and private companies. ISPs have expressed a huge interest in VOIP.

USEFUL CONTACTS

Independent Communications Authority of South Africa (ICASA)
http://www.icasa.org.za

Department of Communications

http://www.doc.gov.za

SOUTH KOREA

VOIP REGULATIONS AND MARKET INFORMATION

The Ministry of Information and Communication (MIC) formally opted on September 1, 2004 to regulate VOIP as a basic telecommunications service rather than consider it an unregulated value-added Internet service, and promulgated a Ministerial Decree amending the Telecommunications Business Act to govern VOIP services. The regulations provide for two types of operator licenses, impose minimum quality of service standards, create a system for providing telephone numbers to VOIP subscribers, and govern interconnection.

The decision to regulate VOIP is intended to promote development of the VOIP market by encouraging participation of the country's major telecommunications service providers, and to act as a stepping stone towards MIC's policy goal of migrating to a completely Internet-based telephony system by 2010. Nevertheless, VOIP remains controversial, with heated debate over interconnection, billing, and its impact on the overall telecommunications market.

MIC regulations define VOIP as "transmission and reception of voice, regardless of area code, through the Internet Protocol network." Service operators – as with other telecommunications services – are divided into facility-based providers (which own their own Internet backbone network, subscriber network, and server equipment) and resellers, which do not own their own network infrastructure.

MIC began providing service licenses to facility-based VOIP operators during the first half of 2005. In the case of resellers, the ministry decided that they could commence operations in 2004, as long as they register with MIC and meet the quality of service requirements.

A key difference between VOIP and current PSTN and wireless telephony is that VOIP subscribers will be unable to make use of the country's "Emergency 911" equivalent. Their current technology does not allow for pinpointing the geographic origin of the VOIP-based call, making it impossible to route the call to the appropriate emergency call center. The regulations also do not require VOIP service providers to develop and provide the technology to allow law enforcement agencies to carry out wiretapping warrants on VOIP subscribers. MIC is not currently contemplating adding E-911 or law enforcement access requirements to VOIP operators, mainly due to technological considerations.

The Korean market for VOIP services was estimated at US$35 million in 2003 and is expected to increase at an annual average growth rate of 66 percent to reach US$267 million by 2007.

USEFUL CONTACTS

Ministry of Information and Communication (MIC)
http://www.mic.go.kr

SPAIN

VOIP REGULATIONS AND MARKET INFORMATION

There are no known regulations specific to VOIP at this time.

USEFUL CONTACTS

Telecommunications Market Commission
http://www.cmt.es

SAUDI ARABIA

VOIP REGULATIONS AND MARKET INFORMATION

The applicable telecom law is the Communications Act (2001).

In April 2005, Saudi Telecom Company (STC) selected California-based Narus Inc. to provide VOIP detection services. The Narus IP platform will capture and analyze VOIP traffic and block traffic destined for an unregistered international VOIP gateway. All traffic will be directed through regulated gateways.

USEFUL CONTACTS

Ministry of Communications & Information Technology
http://www.mcit.gov.sa/Default.asp?l=EN

SWEDEN

VOIP REGULATIONS AND MARKET INFORMATION

VOIP is not currently regulated specifically. The Swedish Telecom Act regulates IP telephony and VOIP. The Telecommunications Act was first introduced in 1993 and amended in 1997, 1998, 1999, and 2000 to reflect updates and changes to different EU laws.

USEFUL CONTACTS

National Post and Telecom Agency (PTS)
http://www.pts.se

SWITZERLAND

VOIP REGULATIONS AND MARKET INFORMATION

Swiss telecom legislation does not include any specific provisions on VOIP. The regulation of VOIP services is therefore based on existing telecom legislation. The Federal Office of Communications (OFCOM) has a list of frequently asked questions on VOIP at http://www.ofcom.ch/en/telekommunikation/internet/voice/faq/index.html. The FAQs include information on regulation and how to become a VOIP operator in Switzerland.

USEFUL CONTACTS

Federal Communications Commission (ComCom)
http://www.fedcomcom.ch/comcom/e/homepage/index.html

Federal Office of Communications (OFCOM)
http://www.ofcom.ch/en/index.html

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TAIWAN

VOIP REGULATIONS AND MARKET INFORMATION

Taiwan's 1996 Telecom Act established the legal framework for liberalization. The Directorate General of Telecommunications (DGT), under the Ministry of Transportation and Communications (MOTC), is Taiwan's telecommunications regulatory body. The Telecom Act divided services into Types I and II. Type I facility-based services include fixed-line, wireless, and satellite communications services. Type II includes those services using the Type I network while also providing additional value-added services. Type II service providers are allowed up to 100 percent foreign investment.

Taiwan's 1997 Type II Services Administrative Rules were amended to include VOIP service in mid-2001. Type II Serves are categorized as either General or Special services. A Special Type II license requires a network inspection process that is not required for General Type II license. VOIP is a Special Type II service. The applicant for a Special Type II service has to submit an application along with its business plan and other relevant documents to DGT for network inspection. An English translation of the rules and the application procedure can be accessed through DGT's website. DGT expects the first IP licenses to be awarded in June 2006.

USEFUL CONTACTS

Directorate General of Telecommunications (DGT)
http://www.dgt.gov.tw

TANZANIA

VOIP REGULATIONS AND MARKET INFORMATION

VOIP is banned.

USEFUL CONTACTS

Tanzania Communications Regulatory Authority (TCRA)
http://www.tcc.go.tz

THAILAND

VOIP REGULATIONS AND MARKET INFORMATION

The Telegraph and Telephone ACT B.E. 2477 (1934) is the major law regulating VOIP.

USEFUL CONTACTS

Ministry of Transport and Communications (MOTC)
http://www.motc.go.th

National Telecommunications Commission (NTC)
http://www.ntc.or.th

Post and Telegraph Department (PTD)
http://www.ptd.go.th

TRINIDAD & TOBAGO

VOIP REGULATIONS AND MARKET INFORMATION

VOIP is allowed only at payphones. VOIP operators include TSTT, which recently announced that it would started offering a range of VOIP services through a partnership with Net2Phone Global Services. Under the two-year agreement, TSTT will use Net2Phone's hosted VOIP platform offering prepaid calling cards for long distance calls. Third-party retail outlets started selling the cards throughout the country.

USEFUL CONTACTS

Telecommunications Authority of Trinidad and Tobago (TATT)
http://www.tatt.org.tt

TURKEY

VOIP REGULATIONS AND MARKET INFORMATION

Other than described above, there are no particular policies or regulations for IP telephony or voice over Internet. MOTC officials have said that the new telecom law addresses Internet telephony.

VOIP regulations have been drafted by the Telecommunications Authority, and are waiting for approval from the Council of Ministers. Telecommunications Authority is the independent regulatory body in charge of issuing licenses, monitoring the regulations, etc.

While IP telephony is prohibited, a few companies are offering IP telephony services illegally.

USEFUL CONTACTS

Telecommunications Authority (Telekomunikasyon Kurumu)
http://www.tk.gov.tr

Turk Telekom
http://www.telekom.gov.tr

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UGANDA

VOIP REGULATIONS AND MARKET INFORMATION

Voice over Internet is prohibited for an exclusive period of five years, after the duopoly for the two main network operators expires. The dominant telecom carriers are not currently engaged in efforts to develop or test IP telephony services. In April 2005, the UCC announced VOIP services would be legalized when new telecoms legislation comes into force in July 2005. [Author's note, September 2006: Check the UCC website for licensing information at http://www.ucc.co.ug/licensingGuidelines/applicationGuidelines.doc. It appears that VOIP is allowed with a Public Providers Service License.]

USEFUL CONTACTS

Uganda Communications Commission (UCC)
http://www.ucc.co.ug

UKRAINE

VOIP REGULATIONS AND MARKET INFORMATION

There are no specific regulations that apply to IP telephony or voice over the Internet except for a requirement to have a license for voice services. In May 2001, the State Committee for Communications of Ukraine introduced licensing of IP telephony.

IP telephony services are currently being actively promoted and offered by domestic ISPs that teamed up with international voice service providers. Dominant telecom carriers are not directly involved in IP telephony, but unofficially they encourage affiliate companies to test its potential in the local market.

USEFUL CONTACTS

State Committee for Communications and Informatization
http://www.stc.gov.ua

UNITED ARAB EMIRATES

VOIP REGULATIONS AND MARKET INFORMATION

VOIP is not allowed in the UAE. The government actively blocks access to services offered through companies such as Skype and Net2Phone. While there were reports in late 2004 that VOIP would be allowed in 2005 (or rather, that the government was considering allowing it), no confirmation could be found of this actually happening.

USEFUL CONTACTS

Ministry of Communications
http://www.uae.gov.ae/moc/default.htm

UNITED KINGDOM

VOIP REGULATIONS AND MARKET INFORMATION

In 2007, Ofcom published a report on the regulation of VOIP services, which can be found at http://www.ofcom.org.uk/consult/condocs/voipregulation/voipstatement/voipstatement.pdf. At the time of the report's publication, Ofcom said that by the end of the year there could be as many as three million VOIP users in the United Kingdom.

USEFUL CONTACTS

Office of Communications (Ofcom)
http://www.ofcom.org.uk

URUGUAY

VOIP REGULATIONS AND MARKET INFORMATION

There are no known regulations regarding VOIP.

USEFUL CONTACTS

URSEC (Communication Services Regulatory Agency)

http://www.ursec.gub.uy

UZBEKISTAN

VOIP REGULATIONS AND MARKET INFORMATION

There are no known regulations regarding VOIP.

USEFUL CONTACTS

Uzbek Communication and Information Agency
http://www.aci.uz

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VENEZUELA

VOIP REGULATIONS AND MARKET INFORMATION

VOIP is allowed, with a license and subject to quality of service standards.

USEFUL CONTACTS

Comisión Nacional de Telecomunicaciones (CONATEL)
http://www.conatel.gov.ve

VIETNAM

VOIP REGULATIONS AND MARKET INFORMATION

VOIP is allowed. All telecommunications services in Vietnam, including the services using VOIP technology, are regulated by Ordinance on Post and Telecommunications No. 43/2002/PL-UBTVQH10 dated May 25, 2002. There are as yet no regulations specific to VOIP. The National Assembly passed the Ordinance, but it was drafted and is monitored by the Ministry of Post and Telematics (MPT).

USEFUL CONTACTS

Ministry of Post and Telematics (MPT)
http://www.mpt.gov.vn/english/introduction/?thucdon=in

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ZAMBIA

VOIP REGULATIONS AND MARKET INFORMATION

In July 2004, the Zambian telecom regulator has urged the state-owned public telecom operator, Zamtel, to use VOIP in order to reduce tariffs for international calls. Zamtel currently has a monopoly on international traffic.

USEFUL CONTACTS

Communications Authority of Zambia (CAZ)
http://www.caz.gov.zm

ZIMBABWE

VOIP REGULATIONS AND MARKET INFORMATION

Currently, the Government of Zimbabwe has no policies or regulations that apply to IP Telephony or voice over the Internet. The current telecom law is the Postal and Telecommunications Bill (1999).

Of the six ISPs currently operating in Zimbabwe (namely Africa Online, Samara Services, Data Control, Zambezi Net, Prime Net Communications, and Inter Data), none are offering telephony services, nor are any in the process of developing or testing such services. The dominant international telecom carriers in Zimbabwe are MCI, AT&T, Global One, Canada Teleglobe, and British Telecom. They are not currently developing IP telephony services in Zimbabwe.

USEFUL CONTACTS

Post and Telecommunications Regulatory Authority of Zimbabwe (POTRAZ)
http://www.potraz.gov.zw